DOCUMENT RESUME

ED 360 850 FL 021 429

AUTHOR Aweiss, Salem
TITLE Meaning Construction in Foreign Language Reading.
PUB DATE Apr 93
NOTE 45p.; Paper presented at the Annual Meeting of the American Association for Applied Linguistics (15th, Atlanta, GA, April 1993).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Arabic; College Students; Comparative Analysis; Higher Education; Introductory Courses; Language Tests; Reading Comprehension; *Reading Skills; *Reading Strategies; *Recall (Psychology); *Second Languages; *Text Structure; Uncommonly Taught Languages

ABSTRACT

A study investigated six aspects of the construction of meaning in second language reading: (1) meaning-making strategies used; (2) content and structure of recalls; (3) relationship between recall and meaning-making strategies; (4) differences in ways of measuring structure awareness for different text structure types; (5) differences in quantitative and qualitative analyses of reading recall protocols as a difference in text structure; and (6) relationship between quantity of recall and structure awareness. Subjects were 13 college students of beginning Arabic as a second language. They were given two reading passages and administered measures of envisionment, of comprehension based on recall, and of awareness of text structure in both the texts and a written recall protocol. Most subjects also participated in an informal group interview. Five major findings emerged. First, quantity of information recalled varied by text structure type, with the expository text more difficult for students than the narrative. Second, quality of information recalled did not differ according to text structure. Third, student abilities to use good meaning-making strategies affected comprehension of both text types. Fourth, two types of awareness measurement (use in recall, recognition in response) did not detect text structure awareness differently. Fifth, different data gathering procedures elicited different knowledge and understanding. Contains 30 references. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 360 850

MEANING CONSTRUCTION IN FOREIGN LANGUAGE READING

BY SALEM AWEISS

PRESENTED AT THE 1993 ANNUAL MEETING OF
THE AMERICAN ASSOCIATION FOR APPLIED LINGUISTICS

ATLANTA, GEORGIA

APRIL 1993

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Salem Aweiss

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

FL021429

In their attempts to discover and describe what it means to be a competent reader, scholars in reading have made different assumptions about meaning-making processes. Reading research since the 1960s has looked into the reader, the text, and the social context in order to explain the reading process. Bernhardt (4) observes that insights and data gathered about reading are generally cognitive or social in nature, "implying in essence, that reading is a meaning-extracting or a meaning-constructing process" (p. 5).

A cognitive perspective often views the reading process as an intrapersonal problem solving task that takes place within the brain's knowledge structures. Cognitive models of reading (21) are text-based and non-linear in nature. The critical element in any cognitive view, according to Bernhardt (4) is that it is an individualistic act that consists of "processing steps that are separate and measurable, although interdependent" (p. 8). In a cognitive view, readers are thought to have processors that act on information in rule-governed ways like a computer program. The internal representation of a text is thus, not a duplicate of the input text, but rather an individual's intrapersonal conceptualization (4).

From a text-oriented framework, reading researchers have looked at the underlying structure of prose that influence recall and inferential processes (18; 20; 26). Reading is a multi-dimensional and multivariate process in which text-driven elements

FL021429

and operations, namely words (word recognition and lexical entries), syntax, and the structure of the text, are as important and as essential to the comprehension process as are the knowledge-driven facets and operations.

Recent conceptualization in literacy acquisition view reading as a process of communication, composing, and meaning construction. It is a process of meaning-in-motion (24) where understandings are developed and altered throughout the activity, reflecting an interaction between what the reader brings to the literacy experience and the inherent complexities of the text itself. Reading calls upon a wide range of knowledge both in the text and in the mind of the individual. During the process of unfolding meaning, readers experience momentary text-worlds or envisionments that are subject to change and grow with time--as the text develops. Langer et al (24) argue that it is the developing and changing envisionment or text-world that is at the heart of the meaning-making process.

When readers develop their ideas, they rely on various kinds of knowledge: knowledge about the content, genre, and structure and how these work together in the evolution of the conceptualization of an entire unit of discourse (16; 22; 24).

This approach to the use of knowledge grows out of the constructivist view that language comprehension involves active participation on the part of the reader (3; 7; 9; 15; 27; 29) and that the meaning that develops is the consequence of a wide range of textual, contextual, and attitudinal forces continually at play

in the human mind. This approach to the use of knowledge is premised on the assumption that the construction of meaning in reading is a function of the interrelationships among a variety of complex sources, and "suggests that the act of meaning construction cannot be described by a linear, or even a simply recursive model" (22: p.74).

Thus, to examine comprehension, it is useful to tap the unfolding of meaning--the reader's changing envisionments as they develop over time.

RELATED RESEARCH

Several separate but converging lines of research bear on the questions being investigated by the present study. The first is the research on reading strategies and metacognition. The second line of research deals with issues of meaning construction in the act of reading a second or a foreign language. A third body of research is on text structure and reading recall. A fourth line of research deals with issues of reading and language.

I- Research on reading strategies has shown the importance of the strategy of recognizing text structure (6), and research on metacognition has shown that readers' metacognitive awareness of strategies is related to reading proficiency (2; 11). Collectively, research has shown that using a structure strategy appears to facilitate reading comprehension as measured by recall.

II- Research by Langer (22) Langer et al (24) on meaning construction in the act of reading a second language points to the importance of using alternative procedures to tap readers' meaning-making abilities.

III- Research by Carrell on text structure and reading recall, has shown significant effects on ESL/EFL reading of differences in both narrative and expository rhetorical patterns (12). Results have suggested that awareness of different text structures may vary according to the measure of awareness (use and recognition) because they may make very different cognitive demands, that is, differences between tasks intended to demonstrate "structure-awareness".

IV- Studies by Lee (25) and Diaz, Moll, and Mehan (14) suggest that when students use their native language to talk or write about what they have read in the target language, more text understanding is displayed than when those same activities are conducted in the target language. Moreover, using the native language to write the recall avoids the confounding effect of the second language. Bernhardt (5) asserts that if the target language is used: (a) those who score the recalls may become distracted by the grammatical errors and focus less on student's actual comprehension; (b) students will attend to grammar, vocabulary, and spelling in the target language and may not recall much information. Swaffer, Arnes, and Byrnes (30) note that writing the

protocol in the student's native language helps reveal "how the readers' logical manipulations--their predicting, organizing, and inferencing about textual meaning--interact with their recognition of textual vocabulary and syntax" (p. 164).

Further, the context of language situation may make a difference. For example, Cummins and Swain (13) posit that second language skills are learned and exhibited more rapidly in informal (context-embedded) situations than in academic (context-reduced) situations, and assert that misjudgments of student performance can be traced to a failure to take this distinction into account.

Ways in which foreign language students construct meaning when reading expository and narrative texts have been left mostly unexplored. The reasoning strategies and operations they use in their L2, the knowledge sources they rely on, and the ways in which these interact with other variables are important issues that need to be explored and understood before new instruction practices are developed.

Moreover, no research in foreign language reading has explicitly investigated the types of relationships between awareness and recall performance on different types of text structures. Therefore, this study set out to address the following research questions:

(a) what meaning making strategies do beginning readers of Arabic as a foreign language use in their envisionment building, and how this affects their meaning-making?

(b) what is the content and structure of their recalls?

(c) what is the relationship between the students' recall scores and meaning-making abilities?
(d) are there differences between three different ways of measuring structure awareness for different types of text structures,
(e) are there differences in quantitative and qualitative analyses of reading recall protocols as a function of differences in text structures? and finally,
(f) are there relationships between quantity of reading recall and structure awareness?

THE STUDY

Subjects. This study was conducted with a group of 13 Arabic as a foreign language (AFL) students enrolled in Level 2 of Arabic program at the Ohio State University. They were defined as beginning proficiency on the basis of their enrollment in this level. Their native language was English.

Materials. Two reading passages--one narrative and one expository--on two different topics were chosen. One text was on the topic of travel and the other on the topic of movies. (see Appendix A).

The two texts were selected from textbooks that are not used in the Arabic program at Ohio state. The texts were appropriate in difficulty and content for the students' proficiency level. Minor textual modifications and different questioning procedures were used. A committee of three experienced AFL instructors were asked

to judge the appropriateness of the two texts. Expert judgment was used for the lack of any readability formulas for Arabic texts.

Measures. Several measures were used in this study. During reading, envisionment questions as well as after reading, probing questions provided an opportunity to tap the students' on-line understanding as well as their ability to recollect what they had already read.

Two different sets of questions adapted from Langer et al (24) were used--envisionment and probing--based on the assumption that the two types of questions tap different competencies and thus provided different views of understanding. In particular, the envisionment questions captured the students' "doing" and the probing questions captured their "talking about."

The dependent measure of reading comprehension was assessed via the immediate written recall protocol. The study also utilized three different measures of awareness (1) use of organization in written recall, and (2) recognition of genre in response to a query, and (c) recognition of organization and features of text structure in response to a several probe questions. In addition, 10 of the 13 subjects took part in an informal group interview.

(1) Envisionment Questions:

For each text, on-line questions were used to tap developing envisionments, to provide as much access as possible to the unfolding of meaning as the students read. These on-line procedures are similar to those used in studies using English

monolinguals. They were also found by Langer and her colleagues (23; 24) to be better elicitation methods than think-alouds, collaborative summarizing, and interspersed comprehension questions.

Each of these activities, according to Langer et al (24: p. 435) "elicited restricted language responses, conveying less than the students seemed to understand." The above listed activities called for either metacognitive and metalinguistic awareness or decontextualized language which evoked limited responses and limited talk.

A set of open-ended envisionment questions that contextualized the task by focusing only on each students' own text-world was used for each text (Appendix A). Each text was divided into topical or episodic sections that stopped at a paragraph boundary. After each section, the students were asked to stop reading and write (in English) what they knew at that point, what they thought the next few words would be, how they thought the piece might end, and what a key phrase in a particular segment meant. These questions provided a way to examine the students' knowledge of the content, genre, and text (syntax and semantics) of each passage without asking directly about each. The procedure also permitted analyses of the students' ability to hypothesize about text meaning. Responses for these questions were not analyzed individually. They were used, along with the probing questions, to determine the readers' meaning-making ability.

(2) Probing Questions:

Another set of questions, adapted from Langer (1986), was used to gather information about the students' knowledge and strategies beyond what was learned from the envisionment questions. These questions were used to probe students' knowledge in four categories: genre, organization, language, and content. They were meant to serve as a way to examine students' ability to answer various types of decontextualized questions.

The students' responses to selected questions were analyzed qualitatively. Moreover, responses to all the probing questions were used to determine a reader's meaning-making ability.

(3) Meaning Making Abilities

An independent rating of meaning-making abilities was used for four categories: overall envisionment building, ability to hypothesize, understanding of text language, and familiarity with genre characteristics. These analyses cut across the envisionment questions, and were carried out separately from all other analyses. For example, to judge responses to all envisionment building, the raters considered each student's responses to all envisionment questions to see if they reflect changing and growing understandings as readings progressed. All responses to hypothesis questions were reviewed for evidence of the student's ability to express hunches or make guesses about subsequent material. Responses to all language questions were considered for evidence of whether the student's familiarity or

unfamiliarity with vocabulary or syntax got in the way of understanding during their reading of the text. Finally, responses to all genre questions were reviewed for evidence of whether the student's predictions indicated knowledge of appropriate genre feature. Each student received an overall score (across texts) on a 1 (low) to 5 (high) performance scale. Interrater reliability was .83.

For example, the readers were rated for overall envisionment building on the following basis.

Figure 1

Rating for Envisionment Building/Hypothesis Making/Understanding of Text Language/Familiarity with Genre Characteristics

1. Overall, the response indicated inappropriate envisionment building.
2. Overall, the response indicated tangential or loosely related envisionment.
3. Overall, the response indicated defensible envisionment.
4. Overall, the response indicated well-developed envisionment.
5. The response indicated well-developed and elaborated envisionment.

(4) Written Recall

Written recall tasks were also designed for each passage. Each written recall was analyzed in terms of concepts recalled using

Johnson's (17) rating scale. For this analysis, each text was decomposed into pausal units or propositions. In addition to the quantity of ideas recalled, and to determine whether there were differences in the kinds of information recalled as a function of awareness measures, the idea units analysis was organized into a hierarchy. Each idea unit was determined to be a top-, high-,mid-, or low-level unit according to the same criteria for assigning weightings used in the Johnson system. Organizing the propositions of each passage into two categories was helpful in analyzing the recall protocol qualitatively in terms of levels of idea units recalled.

Attention was also given to the structure of the recall to see if the same text structure was used in the recalls of the students. This permitted comparison of the content and structure of the recall with the original texts.

(5) Awareness Measures

Three measures were taken of subjects' awareness of text structure. The first was a measure of organization used to organize the recall protocol. The second task, recognition, required the subjects to respond to a query about the genre of the text at hand. The third task, demanding greater metacognitive awareness (i.e., more conscious awareness) of text structure, required subjects to respond to several open-ended question about the different features of text structure. All three measures are

considered valid and reliable indicators of readers' awareness of text structure.

Each recall protocol was analyzed to determine whether or not it used the text type of the original passage. To be classified as a narrative, the protocol had to have been written in the first person narrative; to be classified as expository (description), the overall structure had to reflect the structure of an expository text--sets forth and describe a list of related ideas or events. The judges agreed 90% of the time in their scoring of the rhetorical organization used in the recall protocol.
The open-ended questions were also scored on whether or not the reader had correctly identified the features of text structure.

(6) Student Interviews

Ten subjects took part in an informal group interview. The purpose of the interview was to obtain information about the students' reading processes, language and strategy uses, and their perception of the experimental tasks. Questions and remarks dealt with the topics of reading in a foreign language, language uses, strategy use, background information and text structure and topic familiarity. This data, although not an integral part of the data analysis, provided some insight for interpreting students' performance on the reading tasks they were asked to engage in.

PROCEDURES

All thirteen subjects engaged in the same tasks. Each of the two passages was read silently by the students, who answered the interspersed envisionment questions after each text segment. The probing questions were asked after the reading was complete. Then, the students were asked to write, in English, everything they remembered about the text. These recalls provided further evidence of comprehension of the content and additional information about the organizational and structural features that appeared in the recalls across the two text types. The recall also provided an opportunity to observe the knowledge sources they drew upon in their writing.

The sequence of data gathering procedures was as follows:

1. Introduction session (five minutes)
2. Passage reading session
   (a) reading and interspersed envisionment questions
   (b) probing questions
   (c) written recall
   (d) informal group interview

The data available for analysis were:

(a) 26 sets of student responses to the envisionment questions for each text

(b) 26 sets of responses to probing questions for each text

(c) 26 written recalls

(d) transcribed interview data

ANALYSES

Qualitative Analyses. Data from the probing, post-reading questions were analyzed qualitatively. In particular, subjects' responses on four major questions in the organization, language, and content segments were analyzed for insights into (1) the title and its importance as an advance organizer for improving comprehension, (2) strategies used when encountering difficult words or ideas, and (3) prior knowledge of the topic and its contribution to overall reading enhancement.

Organization: In response to the question "When reading, do you ever think about the title?" 22/26 (85%) of the responses were positive. In a follow up question that looked into whether or not the titles of the two experimental texts helped and if so, how, 5 (20%) responses were negative, 2 (8%) responses reflected partial or limited help, and 19 (73%) responses were positive.

Those who thought the title helped, thought it did so by:
(a) focusing on the topic and the ideas that go with that topic,
(b) making the reader feel s/he knew what kind of words to expect, what sort of information to look for,
(c) figuring out what the text talks about and putting him/her in the right mind set.

Subjects' responses to these two questions indicate the importance of preparing learners for the task of reading. One way to do this would be to use different types of advanced organizers that would put students in the right mind set.

Language: In response to the questions "Where any ideas or words difficult for you in the text you have just read? Which? the majority of subjects who responded to these questions (20/26) indicated (either by listing the words or pointing to their part of speech) that verbs, in general, and those with pronominal suffixes attached to them were the most difficult. The problems with the verbs are probably due to the difficulty of discerning anaphoric relationships in Arabic. This finding has implications for instructional practices and activities. Readers' inability to handle a variety verb types with anaphoric references does not necessarily mean that we need to manipulate texts by removing verbs with anaphoric expressions and by including more nouns and noun phrases. A variety of meaningful, communicative activities in a discourse context are needed to enhance learners' grammatical competence. Contextualizing grammar instruction may help readers use their linguistic knowledge more efficiently and effectively during the comprehension process.

In response to the questions "What did you do when you encountered difficult words or ideas? subjects indicated that they used different strategies, individually or in combination. The most frequently used strategy was continuing reading for clues, followed in descending order of frequency and importance by using context and contextual clues, rereading the whole text to fill the gaps, guessing the meaning, breaking the word down, looking for the root or checking verb endings and beginnings for prefixes and suffixes, skipping the word, sounding out the word, making

assumptions and hypothesis about meaning and testing them in light of linguistic and prior knowledge, and finally reading around the word to predict possible meaning.

These comments by the readers suggest that, as far as reading strategies are concerned, strategy training, may be a viable instructional practice for enhancing comprehension.

Two questions from the Content segment of probing questions were also analyzed qualitatively for insights into the impact of prior knowledge on reading comprehension. In response to the questions "Did knowing something about this topic help you understand? How? the majority of responses indicated that having some kind of knowledge about the topic helped. Those who offered no comments were always the ones that scored low on their recalls. Those who talked about it wrote:

- knowing what people can visit and see in Egypt made it easier for me to understand the vocabulary.

-expected ideas surface even in a less known language.

-the words and expected situations were familiar and help in understanding.

-I knew something about the topic and expected a description of opinion.

-prior knowledge about topic allowed me to guess the places visited and recognize words I had read but had not internalized.

-when I realized the topic, I had an idea and could more easily read around unfamiliar words.

-knowing about the topic made me ignore many potential, illogical interpretations and set my mind on the task.
-knowing about the topic helped me with the vocabulary. I could guess based on what I expected.
-knowing about the culture of the country helped me to process and understand some of the details.
-from prior knowledge, I expected things.
-helped with finding out vocabulary meaning.

Students' remarks attest to the importance of prior knowledge in enhancing reading comprehension in a second language.

Quantitative Analyses. Data were analyzed using the SAS package of statistical procedures. *t*-tests and multivariate ANOVAs were used to test hypotheses about differences in the quantity and quality of recall between the two different text structures. Regression analysis was used to investigate readers' meaning-making ability and how this ability relates to reading comprehension. The GLM Procedure was used to test hypotheses about the relationships between awareness and recall. A significance level of P=.05 was chosen for all quantitative analyses.

FINDINGS

Results were organized around the following key concerns: (a) What was the content, structure, quantity and quality of readers' recalls? (b) What meaning-making strategies did readers use when they read Arabic texts and how that related to their recall

scores?, (c) what was the relationship between recall scores and meaning-making ability for the students in this sample? (d) readers' awareness of text structure as measured by three different measures.

Quantity of Idea Units Recalled

Table 1

RECALL SCORE FOR BOTH TEXTS AND THEIR DIFFERENCE-PAIRED T TEST

Variable	N	Mean	Std Dev	Minimum	Maximum
NSCORE	13	34.3846154	16.4648032	4.0000000	54.0000000
ESCORE	13	24.4615385	15.5382077	2.0000000	45.0000000
DSCORE	13	9.9230769	15.9502431	-28.0000000	41.0000000

Table 2

Variable	T	Prob>|T|
NSCORE	7.5297283	0.0001
ESCORE	5.6761586	0.0001
DSCORE	2.2431108	0.0445

Table 1 presents the descriptive results on the quantity of idea units recalled in terms of text structure. A paired *t* test for two related samples, with repeated measures, revealed that there were statistically significant differences between the overall mean

scores of the narrative text passage compared to the expository text (t=2.243 Pr>0.0445). Thus, overall, subjects recalled greater number of idea units from the narrative type of text structure over the expository text type.

Quality of Ideas Recalled

Table 3

FREQUENCIES OF THE QUALITY OF THE RESPONSE-Paired T Tests

Variable	N	Mean	Std Dev	Minimum	Maximum
NQUAL1	13	2.2307692	1.5892265	0	5.0000000
EQUAL1	13	1.9230769	1.2557560	1.0000000	5.0000000
DQUAL1	13	0.3076923	1.1094004	-1.0000000	3.0000000
NQUAL2	13	4.8461538	3.0234129	1.0000000	10.0000000
EQUAL2	13	3.7692308	2.5217007	0	8.0000000
DQUAL2	13	1.0769231	3.1744170	-3.0000000	8.0000000
NQUAL3	13	5.8461538	3.3873823	0	11.0000000
EQUAL3	13	2.8461538	2.5770188	0	8.0000000
DQUAL3	13	3.0000000	3.5118846	-5.0000000	9.0000000
NQUAL4	13	1.2307692	1.3634421	0	4.0000000
EQUAL4	13	1.6153846	1.7577666	0	5.0000000
DQUAL4	13	-0.3846154	2.2188008	-4.0000000	3.0000000

Table 4

Variable	T	Prob>|T|
NQUAL1	5.0610486	0.0003
EQUAL1	5.5215763	0.0001
DQUAL1	1.0000000	0.3370
NQUAL2	5.7792490	0.0001
EQUAL2	5.3892815	0.0002
DQUAL2	1.2231857	0.2447
NQUAL3	6.2226833	0.0001
EQUAL3	3.9821028	0.0018
DQUAL3	3.0800140	0.0095
NQUAL4	3.2547048	0.0069
EQUAL4	3.3134956	0.0062
DQUAL4	-0.6250000	0.5437

NQUAL1= Narrative text/idea units or propositions of Level 1 quality.

EQUAL1= Expository text/idea units or propositions of level 1 quality.

Table 3 reports the descriptive statistics for the qualitative results, namely the mean number of idea units recalled at the different levels of quality of ideas (top-, high-, mid-, and low-level propositions as a function of text structure and the differences between the number of idea units recalled at each level.

Separate *t* tests for each level were run to determine whether, overall, there were any significant differences between the two text structures at the different levels of ideas. These *t* tests

revealed that the two text structures differed significantly only in terms of the high-level of ideas recalled. More ideas units were recalled from the narrative text than the expository text (t=3.0800, Pr>0.0095). No significant differences were detected in the number of idea units recalled from the other three levels.

Meaning-Making Ability

Ratings of meaning-making abilities indicate that students' performance did not vary across each of the four meaning-making categories. Moreover, all readers exhibited some ability to make sense of what they read, to use hypothesizing strategies, to understand the language of the text, and to demonstrate their familiarity with the characteristics of the genres they read. In one analysis, the differences in the mean scores between the different meaning-making categories across the two text types were examined (Table 5).

Table 5
Simple Statistics for the Four Categories of Meaning-Making Ability Across the Narrative and Experimental Texts

Variable	N	Mean	Std Dev	Minimum	Maximum
NEN	13	2.9230769	1.3204506	1.0000000	5.0000000
EEN	13	3.0769231	1.0377490	1.0000000	4.0000000
DEN	13	-0.1538462	1.1435437	-2.0000000	2.0000000
NHY	13	2.2307692	1.1657506	1.0000000	4.0000000
EHY	13	2.0769231	0.9540736	1.0000000	4.0000000
DHY	13	0.1538462	1.1435437	-1.0000000	3.0000000
NTX	13	2.3076923	0.9473309	1.0000000	4.0000000
ETX	13	2.3846154	0.9607689	1.0000000	4.0000000
DTX	13	-0.0769231	0.9540736	-2.0000000	2.0000000
NGE	13	2.7692308	1.4232502	1.0000000	5.0000000
EGE	13	2.7692308	1.3008873	1.0000000	5.0000000
DGE	13	0	1.2247449	-3.0000000	2.0000000

Regression analyses of the quantitative data revealed no significant differences between the mean scores for the four meaning-making ability categories ($F(1,1)=1.41$, $Pr>0.2596$, $F(1,1)=0.50$, $Pr>0.4922$, $F(1,1)=0.81$, $Pr>0.3864$, and $F(1,1)=2.89$, $Pr>0.1169$) for the envisionment making ability, hypothesizing, understanding of text language, and familiarity with text genre characteristics categories, respectively.

Readers' performance did not vary across each of the four categories of meaning-making ability as a function of text structure. Readers' ability to construct meaning was not different for narrative and expository texts which means that no significant main effect for genre was detected. This finding suggests that the differences in the mean scores of the categories are not good predictors of the differences in the recall protocol scores for the respective texts.

A second analysis investigated the relationship between the four categories of meaning-making ability and the reading comprehension variable as measured via the immediate written recall protocol. Regression analyses revealed a strong relationship between the two variables during the independent reading of narrative texts. In the analysis performed on the quantitative data, the two variables were treated asymmetrically, one variable (recall protocol score) was thought of as the dependent variable or criterion, and meaning-making ability was thought of as the independent variable or predictor. This analysis involved looking at the amount of change in the dependent variable per unit change in the predictor variable. The regression analysis revealed significant relationship (Tables 6, 7, 8, & 9).

Regression analyses of the narrative text revealed significant relationship between the dependent measure of reading comprehension and the four categories of meaning-making ability ($F(1,1)=15.05$, $Pr>0.0025$; $F(1,1)=5.87$, $Pr>0.0339$; $F(1,1)=14.8$, $Pr>0.0031$; & $F(1,1)=9.27$, $Pr>0.0112$).

Tables 6, 7, 8, & 9 also show that for every unit of increase in the Evisionment-making rating, there was a 7.82 points increase in the recall protocol score. For every unit of increase in the hypothesis-making rating, there was an increase of 8.330 points in the recall protocol score. For every unit of increase in the understanding of text language category rating, there was an increase of 13.042 points in the recall protocol score. And finally, for every unit of increase in the familiarity with genre

characteristics rating, there was an increase of 7.8227 points in the recall protocol score.

Table 6
Regressions Investigating Recall SCORE VS.
Meaning-making Ability Categories

Dependent Variable: NSCORE

Source	DF	Type III SS	Mean Square	F Value	Pr > F
NEN	1	1881.0071	1881.0071	15.08	0.0025

Parameter	Estimate	T for H0: Parameter=0	Pr > |T|	Std Error of Estimate
INTERCEPT	6.669117647	0.86	0.4096	7.78026307
NEN	9.481617647	3.88	0.0025	2.44162517

Table 7
Regressions Investigating Recall SCORE VS.
Meaning-making Ability Categories

Dependent Variable: NSCORE

Source	DF	Sum of Type III SS	Mean Square	F Value	Pr > F
NHY	1	1131.6241	1131.6241	5.87	0.0339

Parameter	Estimate	T for H0: Parameter=0	Pr > |T|	Std Error of Estimate
INTERCEPT	15.80188679	1.84	0.0928	8.58410312
NHY	8.33018868	2.42	0.0339	3.43893600

Table 8
Regressions Investigating Recall SCORE VS.
Meaning-making Ability Categories

Dependent Variable: NSCORE

Source	DF	Sum of Type III SS	Mean Square	F Value	Pr > F
NTX	1	1832.0198	1832.0198	14.18	0.0031

Parameter	Estimate	T for H0: Parameter=0	Pr > |T|	Std Error of Estimate
INTERCEPT	4.28571429	0.50	0.6277	8.59192355
NTX	13.04285714	3.77	0.0031	3.46351511

Table 9
Regressions Investigating Recall SCORE VS.
Meaning-making Ability Categories

Dependent Variable: NSCORE

Source	DF	Type III SS	Mean Square	F Value	Pr > F
NGE	1	1487.5326	1487.5326	9.27	0.0112

Parameter	Estimate	T for H0: Parameter=0	Pr > |T|	Std Error of Estimate
INTERCEPT	12.72151899	1.60	0.1372	7.93615733
NGE	7.82278481	3.04	0.0112	2.56963301

Regression analysis of the Expository text (Tables 10, 11, & 12) revealed significant relationship between the dependent measure of reading comprehension and the envisionment making ability, understanding of text language, and familiarity with text genre categories of meaning-making ability ($F(1,1)=17.45$,

Pr>0.0015, F(1,1)=8.61, Pr>0.0136, and F(1,1)=10.47, Pr>0.0079, respectively).

Table 10
Regressions Investigating Recall SCORE VS.
Meaning-Making Ability Categories

Dependent Variable: ESCORE

Source	DF	Type III SS	Mean Square	F Value	Pr > F
EEN	1	1776.9689	1776.9689	17.45	0.0015

Parameter	Estimate	T for H0: Parameter=0	Pr > |T|	Std Error of Estimate
INTERCEPT	-11.61904762	-1.28	0.2270	9.07984123
EEN	11.72619048	4.18	0.0015	2.80724603

Table 11
Regressions Investigating Recall SCORE VS.
Meaning-Making Ability Categories

Dependent Variable: ESCORE

Source	DF	Type III SS	Mean Square	F Value	Pr > F
ETX	1	1271.8210	1271.8210	8.61	0.0136

Parameter	Estimate	T for H0: Parameter=0	Pr > |T|	Std Error of Estimate
INTERCEPT	-1.09027778	-0.12	0.9092	9.33927795
ETX	10.71527778	2.93	0.0136	3.65237628

Table 12
Regressions Investigating Recall SCORE VS.
Meaning-Making Ability Categories

Dependent Variable: ESCORE

Source	DF	Type III SS	Mean Square	F Value	Pr > F
EGE	1	1412.8217	1412.8217	10.47	0.0079

Parameter	Estimate	T for H0: Parameter=0	Pr > |T|	Std Error of Estimate
INTERCEPT	1.363636364	0.17	0.8649	7.83193582
EGE	8.340909091	3.24	0.0079	2.57780566

The analyses also showed that for every unit of increase in the envisionment ability rating, there was an increase of 11.726 points in the recall score. For every unit of increase in the understanding of text language rating, there was an increase of 10.7152 points in the recall protocol score. For every unit of increase in the familiarity with genre characteristics rating, there was an increase of 8.340 points in the recall protocol score.

However, the hypothesizing ability category of the meaning-making ability was not significantly related to reading comprehension score ($F(1,1)=1.67$, $Pr>0.2231$.

Table 13
Regressions Investigating Recall SCORE VS.
Meaning-Making Ability Categories

Dependent Variable: ESCORE

Source	DF	Type III SS	Mean Square	F Value	Pr > F
EHY	1	381.32232	381.32232	1.67	0.2231

Parameter	Estimate	T for H0: Parameter=0	Pr > |T|	Std Error of Estimate
INTERCEPT	12.19014085	1.17	0.2654	10.38829571
EHY	5.90845070	1.29	0.2231	4.57592163

For every unit of increase in the hypothesizing ability, an increase of only 5.908 points was detected in the recall protocol score.

These findings suggest that, overall, meaning-making ability contributes to improvements in reading comprehension of both narrative and expository short Arabic texts. These findings also suggest that such ability is a good predictor of reading comprehension scores.

Awareness and Recall

Analysis of the frequency distributions for the recognition measure of awareness showed that there were no significant differences between the two types of text structure. The data did not reveal any differences in AFL subjects' recognition of one type

of text structure compared to the other. Subjects were not more aware of one type of text structure than the other when awareness was measured in terms of recognition. However, when awareness was measured in terms of use, significant differences were observed. Significantly larger number of readers used the expository text structure in their recalls than the narrative. These findings are not completely consonant with those involving ESL subjects. Carrell's (10) results, for example, showed no differences in levels of awareness regardless of how it was measured, due to differences in text structure.

Of interest in this study was not merely whether there were or were not differences between the two awareness measures used, or between the recalls of each of the two types of text structure, but the relationship between awareness and the quantity of recall by text structure.

First, I looked at the recall scores for both texts and the differences between them when the genre was not recognized for the two texts (NN). *t* test results (Table 14) showed no significant differences at the 0.05 level of significance (t=0.3964, Pr>0.7081).

Table 14
RECALL SCORE FOR BOTH TEXTS AND THEIR DIFFERENCE-PAIRED T TEST

RECOG=N

Variable	N	Mean	Std Dev	Minimum	Maximum
NSCORE	6	23.3333333	18.1952375	4.0000000	48.0000000
ESCORE	6	20.6666667	18.2281833	2.0000000	45.0000000
DSCORE	6	2.6666667	16.4762455	-28.0000000	19.0000000

Table 15
T Tests for Narrative and Expository Texts

Variable	T	Prob>|T|
NSCORE	3.1411934	0.0256
ESCORE	2.7771713	0.0390
DSCORE	0.3964479	0.7081

When we looked at the recall scores when at least on text structure was recognized, significant differences (Table 17) were obtained at the 0.05 level of significance (t=3.1417, Pr>0.0200).

Table 16
RECALL SCORE FOR BOTH TEXTS AND THEIR DIFFERENCE-PAIRED T TEST

RECOG=Y

Variable	N	Mean	Std Dev	Minimum	Maximum
NSCORE	7	43.8571429	6.2830081	33.0000000	54.0000000
ESCORE	7	27.7142857	13.3879832	6.0000000	44.0000000
DSCORE	7	16.1428571	13.5944667	1.0000000	41.0000000

Table 17
T Tests fpr Narrative and Expository Texts

Variable	T	Prob>|T|
NSCORE	18.4680796	0.0001
ESCORE	5.4769345	0.0015
DSCORE	3.1417184	0.0200

Again, the narrative text score was higher than that of the expository text score. These findings suggest that recognizing the genre of at least on text accounts for a good percentage of the variability in the recall protocol score. Readers' recall scores were lower when they were not aware of the genre of the two texts than when they recognized at least the text structure of one text.

A more detailed analysis was done to investigate the effect of awareness of text type on reading comprehension scores. A number of multivariate ANOVAs were separately run for the recall score as a function of text type on the one hand and awareness measures, on the other, and the interaction between the two measures. Separate MANOVAs were conducted for each type of text structure and the interaction between the two measures of awareness of text structure.

Table 18
MANOVA'S INVESTIGATING SCORE VS. USE AND RECOGNITION

Dependent Variable: NSCORE

Source	DF	Type III SS	Mean Square	F Value	Pr > F
USE	1	555.74836	555.74836	3.88	0.0805
RECOG	1	111.80469	111.80469	0.78	0.4002
USE*RECOG	1	50.50892	50.50892	0.35	0.5675

Table 19
MANOVA'S INVESTIGATING SCORE VS. USE AND RECOGNITION

Dependent Variable: ESCORE

Source	DF	Type III SS	Mean Square	F Value	Pr > F
USE	1	363.56808	363.56808	1.51	0.2509
RECOG	1	18.77934	18.77934	0.08	0.7866
USE*RECOG	1	192.30047	192.30047	0.80	0.3954

Table 20
Manova Test Criteria and Exact F Statistics for
the Hypothesis of no Overall USE Effect

Statistic	Value	F	Num DF	Den DF	Pr > F
Wilks' Lambda	0.689868409	1.79821	2	8	0.2265
Pillai's Trace	0.310131591	1.79821	2	8	0.2265
Hotelling-Lawley Trace	0.449551809	1.79821	2	8	0.2265
Roy's Greatest Root	0.449551809	1.79821	2	8	0.2265

Table 21
Manova Test Criteria and Exact F Statistics for
the Hypothesis of no Overall RECOG Effect

Statistic	Value	F	Num DF	Den DF	Pr > F
Wilks' Lambda	0.872024475	0.58703	2	8	0.5782
Pillai's Trace	0.127975525	0.58703	2	8	0.5782
Hotelling-Lawley Trace	0.146756804	0.58703	2	8	0.5782
Roy's Greatest Root	0.146756804	0.58703	2	8	0.5782

Table 22
Manova Test Criteria and Exact F Statistics for the Hypothesis of no Overall USE*RECOG Effect

Statistic	Value	F	Num DF	Den DF	Pr > F
Wilks' Lambda	0.819431682	0.88143	2	8	0.4509
Pillai's Trace	0.180568318	0.88143	2	8	0.4509
Hotelling-Lawley Trace	0.22035799	0.88143	2	8	0.4509
Roy's Greatest Root	0.22035799	0.88143	2	8	0.4509

MANOVA analysis (Table 18) shows no significant differences in the recall scores for the Narrative text as a function of the USE measure of awareness ($F(1,1)=3.88$, $Pr>0.0805$. Also, no significant differences were detected for the Narrative text as a function of the RECOGNITION measure of awareness ($F(1,1)=0.78$, $Pr>0.4002$). Moreover, no significant interaction (USExRECOGNITION) was found between the use and recognition measures of awareness of text structure ($F(1,1)=0.35$, $Pr>0.5675$).

These findings suggest that in reading narrative texts, beginning AFL readers' recognition and/or use of text structure in their recalls account for minute percentage of variability in their recall scores and that use and recognition of text structure are not good predictors of reading comprehension scores when reading narrative texts in Arabic.

As far as the expository text is concerned, no significant differences were detected for either of the two awareness measures, nor was there any significant interaction between the two measures ($F(1,1)=1.51$, $Pr>0.25091$, $F(1,1)=0.08$, $Pr>0.7866$, and $F(1,1)=0.80$,

Pr>0.3954) for use, recognition and interaction respectively Table 19).

Finally, we used several statistics (Wilks' Lambada, Pilla's Trace, Hotelling-Lawly Trace, and Roy's Greatest Root) to test the hypothesis of no overall USE effect (Table 20). The analysis indicated no significant overall effect for USE at the 0.05 level of significance (F(1,2)=1.79821, Pr>0.2265. Similarly, no significant overall Recognition effect (Table 21) was detected (F(1,2)=0.58703, Pr>0.5782). Also no significant overall USE*RECOGNITION effect (Table 22) was detected for the dependent variable (F(1,2)=0.88143, Pr>0.4509). These findings suggest that there are no differences between the two types of awareness measures in terms of their effect on reading comprehension scores.

Quantitatively, those who used the structure of the original text to organize their written recall protocols did not score higher on their recall than those who did not. Also, the readers who said they recognized the genre of the original text did not recall significantly more total idea units than those who did not. These findings corroborate Carrell's (1992) findings in which subjects who recognized or used the structure of the reading passage to organize their written recalls did not show quantitatively superior recalls. In other words, neither the present nor Carrell's (10) study revealed an overall main effect for either awareness measure.

The two measures, at least for this sample, were not good predictors of reading comprehension scores. The finding of no

significant relationship between awareness of text structure and reading comprehension scores are surprising in light of the theoretical evidence that points to the contrary. In particular, the theory of strategic text processing suggests that readers will better comprehend texts when they are aware of features of text structure and when their strategies for approaching a text include trying to identify the structure or structures an author has used.

These findings have implications for classroom instructional practices. The quantitative findings suggest that explicit, overt teaching about the top-level rhetorical organization of texts aimed at facilitating readers' comprehension is questionable. In other words, training in strategy use, at least as far as text structure recognition and use are concerned, may not be a good or practical instructional practice. This means that awareness of structure, both in the sense of use and recognition, many not be amenable to instruction in how to apply a structure strategy to interactive reading in a foreign language. One, however, needs to be cautious in interpreting the results of this study. The small sample size may have rendered the findings insignificant

SUMMARY AND DISCUSSION

Across the analyses, five major findings emerged:

(1) Results showed significant differences between the two types of text structure in terms of the quantity of information recalled by beginning AFL readers. The expository text used in

this study was considerably more difficult for students to read than the narrative. This was evidenced by the significant differences in recall scores obtained from the paired t tests. The present study, however, did not control for text topic which may have been a confounding variable.

(2) There were no significant differences in the quality of information recalled between text structures except for the high-level. More high-level idea units were recalled from the narrative text than from the expository passage. This no significance finding is difficult to explain in light of the fact that the mean recall score of the narrative text was significantly higher that of the expository text. This could be the function of the procedure used to categorize idea units into levels.

(3) The students' abilities to use good meaning-making strategies made a difference in how well they comprehended-both narrative and expository texts.

Analyses of students' abilities to build envisionment, hypothesize about forthcoming information, understand text language, and use appropriate genre knowledge indicated that scoring high in the use of these strategies meant, in general, obtaining high recall score. Students' use of good meaning-making strategies in both texts affected their success in understanding.

(4) The results of this study showed no differences between the two types of awareness measurements used to detect AFL readers' awareness of text structure. USE in written recall protocols was not statistically more frequent than RECOGNITION in response to an

explicit query. Further, the distribution of subjects' use and recognition measures suggested that neither measure is dependent on the other. Those who recognized text structure did not necessarily use it and those who used it did not necessarily recognize it.

Awareness and recall are not, of course, completely separate phenomena. In fact, the study was designed on the assumption that recall of text is facilitated by awareness of text structure. It was anticipated that students who possess a specialized kind of prior knowledge--awareness of different patterns--would be more likely to use structure strategy when they read. They would also be more likely to understand and remember well-structured texts. The results in this study relating the awareness measures and the recall measures did not confirm this prediction. Those subjects who used the structure of the original passage to organize their written recalls did not recall significantly more than did those who did not. Also, subjects who recognized the structure did not recall more than did those who did not. Thus, structure use did not result in quantitatively superior recall.

However, students' awareness of text structure ,when measured in terms of their familiarity with the different features of text genre, affected their ability to build appropriate text-meaning and consequently, resulted in improved comprehension. These contradictory findings suggest that awareness of structure measures may need to be reexamined to substantiate their validity,

reliability, and usefulness as predictors of meaning comprehension scores.

(5) Different data gathering procedures also seem to elicit different knowledge and different understanding. For example, the think-aloud procedure which was used successfully in different studies seems to elicit what the students didn't understand and couldn't do (1; 22). Measurements used in this study, especially probing and envisionment question seem to provide information about what readers could do.

From this study, we learned something about alternative ways of tapping second language students' meaning making and about the strategies they use to arrive at their understanding. The data-gathering approaches provide far more information about the meaning making than those that are more traditionally used, and suggest that assumptions may be too easily made about beginning foreign language learners' lack of understanding, simply because most of the questions used to tap comprehension are probing questions as opposed to the envisionment question type.

We also learned that second language learners know a lot more about what they read than is generally acknowledge, although they do not communicate their knowledge in ways that are traditionally tapped in instructional materials and tests.

LIMITATIONS

There are some important limitations of the present study which would suggest caution in terms of generalizing the results or suggesting pedagogical implications.

First, the small sample size is a serious limitation. If sample size had been larger, the statistical power of the analyses would have been greater. With greater statistical power, it is possible that significant differences could have been detected for the dependent variable.

In addition to investigating only two types of structure, the texts used in this study were relatively short, specially modified passages intended to be prototypically representative of the two text structures. Schallert and Tierney (28) quoted in Carrell (10) note that students are unlikely to encounter such "pure" passages reflecting only one text structure naturally . Further research is needed to examine whether students' awareness of structure shown in reading short, tightly organized passages is the same as in their reading and recall of more natural, longer passages.

This is an initial study. Much more research is needed using more texts, more examples of each type, and a variety of procedures in further attempts to understand student performance in light of language proficiency in L2. Instructional implications also need to be studied. For many of the subjects, instruction in meaning-making strategies may be more helpful than a predominant focus on grammatical accuracy?

BIBLIOGRAPHY

1. Aweiss, Salem. "Cognitive Processing in Reading a Foreign Language: Reasoning Operations, Comprehension Monitoring, Strategy Use, & Knowledge Sources." Considered for publication, *Al-Arabiyyah* 26 (1993c).

2. Barnett, Marva. "Teaching Reading Strategies: How Methodology Affects Language Course Articulation." *Foreign Language Annals* 21 (1988): 109-19.

3. Bartlett, William. *Remembering*. New York: Cambridge University Press, 1932.

4. Bernhardt, Elizabeth. *Reading Development in a Second Language: Theoretical, Empirical, and Classroom Perspectives*. Norwood, NJ: Ablex Publishing Corp, 1991.

5. _____. "Reading in Foreign Language."*Listening, Reading, Writing: Analysis and Application*. Ed. Barb Wing. Middlebury, VT: Northeast Conference on the Teaching of Foreign Languages, 1986: 93-115.

6. Block, Elizabeth. "The Comprehension Strategies of Second Language Learners." *TESOL Quarterly* 2 (1986): 463-491.

7. Bransford, J., & Johnson, M. "Consideration of Some Problems of Comprehension." *Visual Information Processing*. Ed. William Chane. New York: Academic Press, (1973): 23-47.

8. Bransford, J., & Johnson, M. "Contextual Prerequisites for Understanding: Some Investigations of Comprehension and Recall." *Journal of Verbal Learning and Verbal Behavior* 11 (1972): 717-726.

9. Britton, James. *Language and Learning*. London: Penguin Press, 1970.

10. Carrell, Patricia. "Awareness of Text Structure: Effects on Recall." *Language Learning* 42 (1992): 1-19.

11. _____. "Metacognitive Awareness and Second Language Reading." *The Modern Language Journal* 73 (1989): 121-134.

12. _____. "The Effects of Rhetorical Organization on ESL Readers." *TESOL Quarterly* 18 (1984): 441-469.

13. Cummins, Jim. & Swain, Merrill. *Bilingualism in Education*. New York: Longman, 1986.

14. Diaz, S., Moll, L., & Mehan, H. *Sociocultural Resources in Instruction: A Context-Specific Approach*. San Diago:UCSD. Laboratory of Comparative Human Cognition, 1991.

15. Iser, Wolfgang. *The Act of Reading*. Baltimore, MD: John Hopkins University, 1978.

16. _____. "The Reading Process: A Phenomenological Approach." *New Literacy History* 7 (1975): 279-99.

17. Johnson, R. "Recall of Prose as a Function of the Structural Importance of Linguistic Units." *Journal of Verbal Learning and Verbal Behavior* 2 (1970):12-20.

18. Kintsch, Walter. *The Representation of Meaning in Memory* . Hillsdale, NJ: Erlbaum, 1974.

19. _____. "Learning from Text, Levels of Comprehension, or: Why Would Anyone Read a Story, Anyway." *Poetics*, 9 (1980): 87-98.

20. _____. "On Comprehending Stories." *Cognitive Psychology* 5 (1977): 257-274.

21. LaBerge, Daniel., & Samuels, S. "Toward a Theory of Automatic Information Processing in Reading." *Cognitive Psychology* 6 (1974): 293-323.

22. Langer, Judith. A. *Children Reading and Writing: Structures and Strategies*. Norwood, NJ: Ablex, 1986.

23. _____. "The Construction of Meaning and the Assessment of Comprehension." *Cognitive and Linguistic Analysis of Test Performance*. Ed. Roy Freedle. Norwood, NJ: Ablex, 1987.

24. Langer, Judith., Bartolome, Lilia., Vasquez, Olga., & Lucas, Tamara. "Meaning Construction in School Literacy Tasks: A Study of Bilingual Students." *American Educational Research Journal* 27 (1990): 427-71.

25. Lee, James. "Background Knowledge and L2 Reading." *Modern Language Journal* 70 (1986): 350-354.

26. Meyer, Bonnie. J. *The Organization of Prose and its Effects on Memory*. New York: North-Holland, 1975.

27. Rumelhart, David. E. "Schemata: The building Blocks of

Cognition." *Theoretical Issues in Reading Comprehension.* Eds. R. Spiro, B. Bruce, & W. Brewer. Hillsdale, NJ: Lawrence Erlbaum, 1980: 33-58.

28. Schallert, David & Tierney, Robert. "The Nature of High School Textbooks and Learner: Overview and Update. Paper, Annual Meeting of the National Reading Conference, Dallas, 1981.

29. Spiro, Rand. "Constructive processes in Prose Comprehension and Recall. *Theoretical Issues in Reading Comprehension.* Ed. Rand Spiro. Hillsdale, NJ: Erlbaum, 1980: 245-278.

30. Swaffer, Janet., Arens, Cynthia., & Byrnes, Heidi. *Reading for Meaning: An Integrated Approach to Language Learning.* Englewood Cliffs, NJ: Prentice-Hall Inc., 1991.

APPENDIX A

I- Envisionment Questions

What have you learned so far from what you've read?

What do you think you will read about next?

What do you think the next few word will be?

How do you think the piece will end?

What do you think it means to say " "

Did you have trouble with " ", " ", etc.? How can (did) you figure out what they it means?

II- Probing Questions

(a) Genre:

What kind of writing is this piece you just read?

How do you know?

In this kind of piece, is the content in a certain order?

What?

What order was used in the piece you just read?

What is the usual beginning of a "text" like the one you have just read?

Did the one you just read have that beginning?

What is the usual ending of a "text" like the one you have just read?

Did the one you just read have that ending?

(b) Organization:

When you are reading, how do you know what to think next?

In the text you have just read, could the parts be switched around?

How would switching them change the text?

When reading, do you think about the title?

Did this title help you when you are reading?

(c) Language:

Were any idea or words difficult for you in the piece you have just read?

Which?

When you read, did you say the words to yourself in Arabic?

Did ideas come to you in English or Arabic?

When the reading was difficult for you, did you think in English or Arabic?

When you finished reading the text, did you think about it in Arabic or English? What did you think?